

Application No. 10/596,026
Amdt. Dated: June 19, 2008
Reply to Office Action Dated: March 26, 2008

REMARKS/ARGUMENTS

The Examiner is thanked for the Office Action mailed March 26, 2008. The status of the application is as follows:

- Claims 1-11 are pending, claims 1 and 11 have been amended, and claims 12-20 being newly added;
- Claims 1-3, 5, 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Pritzkow (US 4,521,689); and
- Claims 4, 6, 7, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pritzkow.

The rejections are discussed below.

Background

The claims relate to an X-ray detector apparatus and method for manufacturing same in which detector modules are two-dimensionally arranged. The X-ray detector is comprised of detector modules positioned within a base structure with guide elements. The detector modules are positioned on the guide elements with at least one respective guide structure. The guide elements extend in a first direction and at least two of the detector modules are positioned consecutively on one of the guide elements in the first direction. The guide elements are separated from one another in a second direction. The use of the guide elements provides for the precise positioning and displaceability of the detector modules.

The Rejection of Claims 1-3, 5, 8-10 under 35 U.S.C. 102(b)

Claims 1-3, 5, 8-10 stand rejected under 35 U.S.C. 102(b) as being anticipated by Pritzkow. This rejection should be withdrawn because Pritzkow does not teach each and every element as set forth in the subject claims and, therefore, does not anticipate claims 1-3, 5, 8-10.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). MPEP §2131.

Independent claim 1 recites a detector comprising a base structure with guide elements, detector modules with at least one respective guide structure for positioning relative to at least one of the respective guide elements, wherein the guide elements extend in a first direction, at least two of the detector modules are positioned consecutively on one of the guide elements in the first direction and there are guide elements which are separated from one another in a second direction. Claim 1 has been amended to clarify that at least two of the detector modules are positioned consecutively on one of the same guide elements in the first direction. Pritzkow does not teach or suggest such claim aspects.

Pritzkow discusses a prior art modular radiation-detecting array comprised of a plurality of detector modules 13, 15, 17, 19 and 21. Each of the detector modules 13, 15, 17, 19 and 21 include gas ionization detector cells supported between an upper and lower insulating substrate. Each of the detector modules are secured to the support members with threaded fasteners. The threaded fasteners are threaded into an insert bonded by an adhesive into a cavity formed in the insulating substrate. Pritzkow also teaches two embodiments of a new detector array similar to the foregoing prior art detector array that is simpler and less time consuming to assemble. With these embodiments, nut plates 65 are fastened to insulating substrates, which are utilized for rigidly and releasably securing the detector modules between parallel frame members 1, 3.

In Figs. 3 and 4, an embodiment of the new detector array is shown with an exemplary detector module 21 shown positioned between support members 1 and 3. The exemplary detector module 21 is comprised of a plurality of electrode plates 47 supported between an upper insulating substrate 43 and lower insulating substrate 45. The spaces between electrode plates 47 are filled with an ionizable gas, such as xenon. A plurality of threaded fasteners 67 passes through an aperture 69 formed in support members 1 and 3 and threadably engages nut plates 65 which have formed therein a plurality of threaded holes 73 for receiving a corresponding plurality of fasteners 67. Counterbores 75 are provided in the insulating substrates 43, 45 to accommodate that portion of fastener 67 extending beyond nut plates 65. This portion of each of the fasteners 67 extending beyond nut plates 65 into counterbores 75 secures detector module 21 between support members 1 and 3.

In Figs. 7 and 8, a single detector module of another embodiment of a new detector array is shown. The construction of the detector array is substantially the same as the embodiment

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shown in Figs. 3 and 4 with the exception that the xenon gas and electrode plates 47 are replaced by a solid-state scintillator detector material 48. The detector material 48 is positioned within a detector cell defined by adjacent pairs of collimator plates 47. An X-ray photon enters through a detector front wall 42 and is absorbed at an absorption site within scintillator material 48. As a result of the absorption process, the X-ray is converted to lower energy optical photons in the visible and near-visible wavelengths of the electromagnetic spectrum. The optical photons are radiated in all directions, but only those photons travelling toward a photodiode 50 situated on the rear wall of the detector are converted to electrical signals appearing on a diode output lead 52.

Notably, the fasteners 67 in Pritzkow are not the same as the guide elements 2 extending in a first direction. Most significantly, Pritzkow does not disclose that at least two of the detector modules are positioned consecutively on one of the same guide elements in the first direction as is required by amended claim 1. Accordingly, applicant respectfully submits that claim 1 is allowable, and this rejection should be withdrawn.

Claims 2-3, 5 and 8-10 depend from claim 1 and are allowable at least by virtue of their dependencies upon an allowable base claim.

The Rejection of Claims 4, 6, 7, and 11 under 35 U.S.C. 103(a)

Claims 4, 6, 7, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pritzkow. Claims 4, 6 and 7 depend from claim 1 and are allowable at least by virtue of their dependency upon allowable base claim 1.

Independent claim 11 recites a method of manufacturing the detector claimed in independent claim 1. Claim 11 was amended similarly to claim 1 to clarify that at least two of the detector modules are consecutively slipped onto one of the same guide elements. As such, the discussion above regarding claim 1 applies *mutatis mutandis* to claim 11, and this rejection should be withdrawn.

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New Claims 12-20

Newly added claims 12-20 emphasize various aspects. No new matter has been added. The aspects in these claims are absent from the art of record relied upon by the Office. Entry and allowance of claims 12-20 is respectfully requested.

Conclusion

In view of the foregoing, it is submitted that the claims distinguish patentably and non-obviously over the prior art of record. An early indication of allowability is earnestly solicited.

Respectfully submitted,

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